

## APPENDIX

SEQ ID N°	SEQUENCE INFORMATION
SEQ ID N° 1	<i>D.melanogaster</i> SD07655 cDNA (= DmMRP4b8d)
SEQ ID N° 2	Ag MRP1a
SEQ ID N° 3	Ag MRP1b
SEQ ID N° 4	Ag MRP1c
SEQ ID N° 5	Ag MRP1d
SEQ ID N° 6	human MRP
SEQ ID N° 7	exon 4'a DmMRP
SEQ ID N° 8	exon 4 b DmMRP
SEQ ID N° 9	exon 8 a DmMRP
SEQ ID N° 10	exon 8 b DmMRP
SEQ ID N° 11	exon 8 c DmMRP
SEQ ID N° 12	exon 8 d DmMRP
SEQ ID N° 13	exon 8 e DmMRP
SEQ ID N° 14	exon 8 f DmMRP
SEQ ID N° 15	exon 8 g DmMRP
SEQ ID N° 16	DmMRP 4a8a
SEQ ID N° 17	DmMRP 4a8b
SEQ ID N° 18	DmMRP 4a8c
SEQ ID N° 19	DmMRP 4a8d
SEQ ID N° 20	DmMRP 4a8e
SEQ ID N° 21	DmMRP 4a8f
SEQ ID N° 22	DmMRP 4a8g
SEQ ID N° 23	DmMRP 4b8a
SEQ ID N° 24	DmMRP 4b8b
SEQ ID N° 25	DmMRP 4b8c
SEQ ID N° 26	DmMRP 4b8e
SEQ ID N° 27	DmMRP 4b8f
SEQ ID N° 28	DmMRP 4b8g
SEQ ID N° 29	Primer Dr2for (table 2)
SEQ ID N° 30	Primer Dr6rev (table 2)
SEQ ID N° 31	Primer Dr4arev (table 2)
SEQ ID N° 32	Primer Dr4brev (table 2)
SEQ ID N° 33	Primer DR17 (table 2)
SEQ ID N° 34	Primer DR18 (table 2)
SEQ ID N° 35	Primer rev 8 (table 2)
SEQ ID N° 36	Primer 8a (table 2)
SEQ ID N° 37	Primer 8b (table 2)
SEQ ID N° 38	Primer 8c (table 2)
SEQ ID N° 39	Primer 8d (table 2)
SEQ ID N° 40	Primer 8e (table 2)
SEQ ID N° 41	Primer 8f (table 2)
SEQ ID N° 42	Primer 8g (table 2)
SEQ ID N° 43	Primer gMPR1 for (table 4)
SEQ ID N° 44	Primer gMPR1 rev (table 4)
SEQ ID N° 45	Primer MRP104 (table 4)
SEQ ID N° 46	Primer MRP105 (table 4)
SEQ ID N° 47	Primer gMPR2 for (table 4)
SEQ ID N° 48	Primer gMPR3 for (table 4)
SEQ ID N° 49	Primer gMPR4 for (table 4)
SEQ ID N° 50	Primer gMPR234 rev (table 4)

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KNAGIVS

AAB46616. multidrug resista...[gi:1835659] BLink, Domains, Links

LOCUS AAB46616 1531 aa linear PRI 10-FEB-1997

DEFINITION multidrug resistance-associated protein [Homo sapiens].

ACCESSION AAB46616

VERSION AAB46616.1 GI:1835659

DBSOURCE locus HUMMRPX accession L05628.1

KEYWORDS

SOURCE Homo sapiens (human)

ORGANISM Homo sapiens

Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;

Mammalia; Eutheria; Primates; Catarrhini; Hominidae; Homo.

REFERENCE 1 (residues 1 to 1531)

AUTHORS Cole,S.P., Bhardwaj,G., Gerlach,J.H., Mackie,J.E., Grant,C.E.,

Almquist,K.C., Stewart,A.J., Kurz,E.U., Duncan,A.M. and Deeley,R.G.

TITLE Overexpression of a transporter gene in a multidrug-resistant human lung cancer cell line

JOURNAL Science 258 (5088), 1650-1654 (1992)

MEDLINE 93088080

PUBMED 1360704

REFERENCE 2 (residues 1 to 1531)

AUTHORS Stride,B.D., Valdimarsson,G., Gerlach,J.H., Wilson,G.M., Cole,S.P. and Deeley,R.G.

TITLE Structure and expression of the messenger RNA encoding the murine multidrug resistance protein, an ATP-binding cassette transporter

JOURNAL Mol. Pharmacol. 49 (6), 962-971 (1996)

MEDLINE 96251691

PUBMED 8649356

REFERENCE 3 (residues 1 to 1531)

AUTHORS Gerlach,J.H.

TITLE Direct Submission

JOURNAL Submitted (30-JAN-1997) Cancer Research Labs, Queen's University, Kingston, ON K7L 3N6, Canada

COMMENT On Feb 10, 1997 this sequence version replaced gi:292333.

FEATURES Location/Qualifiers

source 1..1531

/organism="Homo sapiens"

/db\_xref="taxon:9606"

Protein 1..1531

/product="multidrug resistance-associated protein"

CDS 1..1531

/gene="MRP"

/coded\_by="L05628.1:197..4792"

/note="putative"

ORIGIN

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 541 ksaysavgt ftwvctplfv alctfavyvt idennildaq tafvslalfn ilrfplnilp  
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1381 sgslrmnldp fsqysdeevw tslelahlkd fvsalpdkl d hecaeggenl svqqrqlvcl  
1441 arallrktki l v l d e a t a a v d l e t d d l i q s t i r t q f e d c t v l t i a h r l n t i m d y t r v i v l  
1501 dkgeiqeyga psdllqqrql fysmakdagl v  
//

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NCBI | NLM | NIH



SEQ ID NO 7-15 (variants exons 4 and 8 DmMRP).doc  
SEQUENCES OF *D. melanogaster* IN FIGURE 4

*Drosophila melanogaster* Exon 4 variants (amino acids encoded by exons 4a and 4b)

exon 4a VSLVTFATYVLTSEANQLSVEKVLVSIALFDLMKLPLTILPMLSVDIAE

exon 4b VSLVTFATYVLIDENNVLDATKTFVSLSLFNILRFPLTMLPMLITNLVQ

*Drosophila melanogaster* Exon 8 variants (amino acids encoded by exons 8a to 8g) :

exon 8a

ATNFFSSLAISLGCLKCSQLLHQTLLEYNLRWPMELFDTTPLGRIVNRFSKDIDTIDNVLPFNIRVVIGQAYM

exon 8b

VTGYLSTLILSLGCVYSARYMHNVLHGTLRWPMEMFDITPLGRIVNRFSKDVDTIDNTLPLNLRVVILQLF  
A

exon 8c

TSYFFCSLTLALGCIPCSKVLHETLLSYVFRWPMELFDTTPLGRVVNRFSKDVDTIDNVLPMLWRMVISQAF  
A

exon 8d

LSKYLSGLALAIGGLHCSMNVFNKLLNTGLKWPMELFDTTPLGRILSRYSKDVDTVDSVLPATVQLLNTC  
FG

exon 8e

VLAYFAVVIVYLGGFQAAKTIHNELLAVIIRGSVCRFFDITPIGRLLNSFSGDMDVVDEELPATMDSFMTFIF  
M

exon 8f

LCNYGAAISLFTATLHASSRVFHRLFNIMHCPSEFFDTPKGRILDRCSSDVNCLDLVMPLNIRMVMSTAF  
Q

exon 8g

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FE

>CDS undefined product 8660:30368 forward MW:172511  
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MLRSRLTIIPQDPVLFSGSLRINLDPFEIKTDDEIWKALELSHLKSFVKSLAAGLNHEIA  
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>CDS undefined product 8660:30368 forward MW:172450  
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>CDS undefined product 8660:30368 forward MW:172569
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VANDTGLRDMYLVGYGAFGFGQVTSYFFCSLTALGCI FCSKVLHETLLSYVFRWPMELF
DTTPLGRVVNRFSKDVDITIDNVLPMLWRMVISQAFVAVLATIVVISLSTPIFLAVIVPIAF
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>CDS undefined product 8660:30368 forward MW:172085  
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VANDTGLRDMYLG VYGAFGFGQVLSKYLSGLALAIGGLHCSMNVFNKLLNTGLKWPMEF  
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>CDS undefined product 8660:30368 forward MW:172309  
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>CDS undefined product 8660:30368 forward MW:172311  
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>CDS undefined product 8660:30368 forward MW:172246

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>CDS undefined product 8660:30368 forward MW:172704  
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>CDS undefined product 8660:30368 forward MW:172643  
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GTVEKAIKLARTESLSDSISVTSADSLMGGGSLRRRTKRQDSHDSVASAASLKKKQVEVE  
GKLIETEKSTGGVEFAVYKHYIKSVGIFLSVATLVLNLFVQAFQIGSNLWLTQWANDQN  
VANDTGLRDMYLG VYGAFGFGQVVTGYLSTLILSLGCVYSARYMHNVLHGTLRWPMEMF  
DITPLGRIVNRFSDVDTDIDNTLPLNLRVVILQLFAVLATIVVISLSTPIFLAVIVPIAF  
LYYFAQRFYVATSRQLMRLESVSRSPIYSHFSETVTGASTIRAYNVGDRFIEESDAKVDK  
NQVCKYPSVIANRWLAIRLEMVGNLIILFASLFAVLGGQTNPGLVGLSVSYALQVTQTLN  
WLVRMSSDIETNIVSVERIKEYGETKQEAPWELEQDKNPKNWPQEGRVEFQNFQVRYRE  
GLDLVLRGVSFNIQGGGKVGIVGRTGAGKSSLTLALFRIIEAAGGRISIDGVDIASMGLH  
MLRSRLTIIPQDPVLFSGSLRINLDPFEIKTDDEIWKALELSHLKSFVKSLAAGLNHEIA  
EGGENLSVGQRQLVCLARALLRKTQVLVLDEATAAVDLETDDLIQKTIRTEFKECTVLT  
AHLNLTILSDKVIVLDKGQIIIEFASPTELLNPKSAF

>CDS undefined product 8660:30368 forward MW:172762  
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FLLLFIFIPLNRKYGVQTTGCGQFIWFLLTVLSIPRCRTEVRLDAERQKILNSQQPSEQD  
FSWEYQFVSFFIFFTFTSIMLILNCFADGMPROTQYQRGNEIPELSASFLSRITYQWF  
DKMALKGYRNPLEEKDLWDLRPQDSCSEVMPIFAHHWNQNRKNYKNKARVEPKAQFSNG  
NVTTFENPHGEKNGRKKGMASIMPPIYKSFGGVFLFGALMKLFTDTLTFAQPQVLSLIISF  
VEAQDAEPEWKGILYAVLLFVLAAQTFILGQYFHRMFIVGLRIRRTALINAIYRKALRIS  
NSTKKESTVGEIVNLMAVDAQRFMELTTYLNMIWSAPLQIGLALYFLWQQLGPSVLAGLA  
VMIIIPVNGVIASRIKTYQIRQMKYKDERVKLMNEVLSGIKVLKLYAWEPSFEKQVLDI  
RDKEIATLRSTAYLNAGTSFLWSCAPFLVSLVTFATYVLIDENNVLDATKTFVLSLFINI  
LRFPLTMLPMLITNLVQTQVSVNRINKFLNSEELDPNSVLHDSSKPHPMSENGEFSWGD  
EITLRNINIEVKKGSVALVGTVGSGKSSVVQAFLGEMEKLAVVNTVGKLAYVPQQAWI  
QNATVRDNILFGQTYDRKRYNKVIDACALRADIDILSAGDLTEIGEKGINLSGGQKQRIS  
LARAVYSDADLYLLDDPLSAVDAHVGKHIFEEVIGPKGILARKSRVLVTHGVTFLPQVDS  
IYVIKGEISESGTDFDQLVKNKGAFADFIIQHLQEGNEEEELNQIKRQISSTADVPELL  
GTVEKAIKLARTESLSDSISVTSADSLMGGGGSLRRRTKRQDSHDSVASAASLKKKQVEVE  
GKLIETEKSTGGVEFAVYKHYIKSVGIFLSVATLVLNLFVQAFQIGSNLWLTQWANDQN  
VANDTGRLDMYLGVYGAFGFGQVTSYFFCSLTALGCI FCSKVLHETLLSYVFRWPMELF  
DTTPLGRVVNRFSKDVDTDIDNVLPMLWRMVISQAFVLAIVISLSTPIFLAVIVPIAF  
LYYFAQRFYVATSRQLMRLESVSRSPIYSHFSETVTGASTIRAYNVGDRFIEESDAKVDK  
NQVCKYPSVIANRWLAIRLEMVGNLIILFASLFAVLGGQTNPGLVGLSVSYALQVTQTLN  
WLVRMSSDIETNIVSVERIKEYGETKQEAPWELEQDKNPKNWPQEGRVEFQNFQVRYRE  
GLDLVLRGVSFNIQGGKVGIVGRTGAGKSSLTLALFRIIEAAGGRISIDGVDIASMGH  
MLRSRLTIIPQDPVLFSGSLRINLDPFEIKTDDEIWKALELSHLKSFVKSLAAGLNHEIA  
EGGENLSVGQRQLVCLARALLRKTQVLVLDEATAAVDLETDDLIQKTIRTEFKECTVLT  
AHLNTILDSKIVIVLDKGQIIIEFASPTELLNPKSAF

>CDS undefined product 8660:30368 forward MW:172502  
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ASLDRNIPWNKLNVSALVNLGLLVITALDLIMALVKKGGDSELPYDLVDVWGPIIKFAT  
FLLLFIFIFLNRKYGVQTTGCGQFIFWFLLTVLSIPRCRTEVRLDAERQKILNSQQPSEQD  
FSWEEYQFVSFFIFFTFTSIMLIILNCFADGMPRQTKYQRGNEIPELSASFLSRITYQWF  
DKMALKGYRNPLEEKDLWDLRPQDSCSEVMPIFAHHWNQNVKKNYKNKARVEPKAQFSNG  
NVTTFENPHGEKNRKKGMASIMPPIYKSFGGVFLFGALMKLFTDTLTFAQPQVLSLIISF  
VEAQDAEPEWKGILYAVLLFVLAQAQTFILGQYFHRMFIVGLRIRRTALINAIYRKALRIS  
NSTKKESTVGEIVNLMAVDAQRFMELTTYLNMIWSAPLQIGLALYFLWQQLGPSVLAGLA  
VMIILIPVNGVIASRIKTYQIRQMKYKDERVKLMNEVLSGIKVLKLYAWEPSFEKQVLDI  
RDKEIATLRSTAYLNAGTSFLWSCAPFLVSLVTFATYVLIDENNVLDATKTFVLSLSLFI  
LRFPLTMLPMLITNLVQTQVSVNRINKFLNSEELDPNSVLHDSSKPHPMSENGEFSWGD  
EITLRNINIEVKKGSVALVGTVGSGKSSVQAFLGEMEKLAVVNTVGKLAYVPQQAWI  
QNATVRDNILFGQTYDRKRYNKVIDACALRADIDILSAGDLTEIGEKGINLSGGQKQRIS  
LARAVYSDADLYLLDDPLSAVDAHVGKHIFEEVIGPKGILARKSRVLVTHGVTFLPQVDS  
IYVIKMGEEISESGTFDQLVKNGAFADFI IQHLQEGNEEEELNQIKRQISSTADVPELL  
GTVEKAIKLARTESLSDSISVTSADSLMGGGSLRRRTKRQDSHDSVASAASLKKKQEEVE  
GKLIETESQTTGGVEFAVYKHYIKSVGIFLSVATLVLFVVFQAFQIGSNLWLTQWANDQN  
VANDTGRLRDMYLG VYGAFGFGQGVLAYFAVVIVYLGGFQAAKTIHNELLAVIIRGSVCRF  
FDITPIGRLLNSFSGDMDVDEELPATMDSFMTFIFMVLATIVVISLSTPIFLAVIVPIA  
FLYYFAQRFYVATSRQLMRLESVSRSPIYSHFSETVTGASTIRAYNVGDRFIEESDAKVD  
KNQVCKYPSVIANRWLAIRLEMVGNLIILFASLFAVLGGQTNPGLVGLSVSYALQVTQTL  
NWLVRMSSDIETNIVSVERIKEYGETKQEAPWELEQDKNPKNWPQEGRVEFQNFQVRYR  
EGLDLVLRGVSFNIQGGEKVGIVGRTGAGKSSLTLALFRIIEAAGGRISIDGVDIASMGL  
HMLRSRLTIIIPQDPVLFSGSLRINLDPFEIKTDDEIWKALELSHLKSFVKSLAAGLNHEI  
AEGGENLSVGQRQLVCLARALLRKTKVLVLDEATAAVDLETDLLIQKTIRTEFKECTVLT  
IAHRLNTILDSKVIIVLDKGQIIIEFASPTLELDNPKSAF

>CDS undefined product 8660:30368 forward MW:172504  
MADDTSSPMDFRCGSTFWNATETWYTNDPFTPCFEQTALVWTPCAFYWAFVIFDFYYLK  
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FLLLFIFIFLPLNRKYGVQTTGCGQFIFWFLLTVLSIPRCRTEVRLDAERQKILNSQQPSEQD  
FSWEEYQFVSFFIFFTFTSIMLILNCFADGMPRQTKYQRGENEIPELSASFSLRITYQWF  
DKMALKGYRNPLEEKDLWDLRPQDSCSEVMPIFAHHWNQNVKKNYKNKARVEPKAQFSNG  
NVTTFENPHGEKNRKKGMASIMPPIIYKSFGGVFLFGALMKLFTDTLTFAQPQVLSLIISF  
VEAQDAPEWKGILYAVLLFVLAAQTFILGQYFHRMFIVGLRIRITALINAIYRKALRIS  
NSTKKESTVGEIVNLMAVDAQRFMELTTYLNMIWSAPLQIGLALYFLWQQLGPSVLAGLA  
VMIILIPVNGVIASRIKTYQIRQMKYKDERVKLMNEVLSGIKVLKYAWEPSFEKQVLDI  
RDKEIATLRSTAYLNAGTSFLWSCAPFLVSLVTFATYVLIDENNVLDATKTFVSLSLFNI  
LRFPLTMLPMLITNLVQTQVSVNRINKFLNSEELDPNSVLHDSSKPHPMSENGEFSWGD  
EITLRNINIEVKKGSVALVGTVGSGKSSVVQAFLGEMEKLAVVNTVGKLAYVPQQAWI  
QNATVRDNILFGQTYDRKRYNKVIDACALRADIDILSAGDLTEIGEKGINLSGGQKQRIS  
LARAVYSDADLYLLDDPLSAVDAHVGKHI FEEVIGPKGILARKSRVLVTHGVTFLPQVDS  
IYVIKMGEISESGTDFDQLVKNKGAFADFI IQHLQEGNEEEELNQIKRQISSTADVPELL  
GTVEKAIKLARTESLSDSISVTSADSLMGGGSLRRRTKRQDSHDSVASAASLKKKQEVE  
GKLIETEKSTGGVEFAVYKHYIKSVGIFLSVATLVLFVQAFQIGSNLWLTQWANDQN  
VANDTGLRDMYLG VYGAFGFGQGLCNYGAAISLFTATLHASSRVFHRLFNNIMHCPSEFF  
DTPPKGRILDRCSSDVNCLDLVMPNIRMVMSTAFQVLATIVVISLSTPIFLAVIVPIAF  
LYYFAQRFYVATSRQLMRLESVSRSPIYSHFSETVTGASTIRAYNVGDRFIEESDAKVDK  
NQVCKYPSVIANRWLAIRLEMVGNLIILFASLFAVLGGQTNPGLVGLSVSYALQVTQTLN  
WLVRMSSDIETNIVSVERIKEYGETKQEAPWELEQDKNKPKNWPQEGRVEFQNFQVRYRE  
GLDLVLRGVSFNIQGGEKVGIVGRTGAGKSSLTALFRIIEAAGGRISIDGVDIASMGLH  
MLRSRLTIIPQDPVLFSGSLRINLDPFEIKTDDEIWKALELSHLKSFVKSLAAGLNHEIA  
EGGENLSVGQRQLVCLARALLRKTQVLVLDEATAAVDLETDDLIQKTIRTEFKECTVLTII  
AHLNLTILSDSKVIVLDKGQII EFASPTLELDNPKSAF

>CDS undefined product 8660:30396 forward MW:173533  
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FLLLFIFIPLNRKYGVQTTGCGFIFWLLTVLSIPRCRTEVRLDAERQKILNSQQPSEQD  
FSWEEYQFVSFFIFFTFTSIMLILNCFADGMPRQTKYQRGNEIPELSASFSLRITYQWF  
DKMALKGYRNP LEEKDLWDLRPQDSCSEVMPIFAHHWNQNVKKNYKNKARVEPKAQFSNG  
NVTFENPHGEKNRKKGMASIMPPIYKSFSGGVFLFGALMKLFTDTLTFAQPQVLSLIISF  
VEAQDAEPEWKGILYAVLLFVLAAQTFILGQYFHRMFIVGLRIR TALINAIYRKALRIS  
NSTKKESTVGEIVNLMAVDAQRFMELTTYLNMIWSAPLQIGLALYFLWQQLGPSVLAGLA  
VMIIILIPVNGVIASRIKTYQIRQMKYKDERVKLMNEVLSGIKVLKLYAWEPSFEKQVLDI  
RDKEIATLRSTAYLNAGTSFLWSCAPFLVSLVTFATYVLIDENNVLDATKTFVSLSLFNI  
LRFPLTMLPMLITNLVQTQVSVNRINKFLNSEELDPNSVLHDS SKPHPMSENGEFSWGD  
EITLRNINIEVKGSLVALVGTVGSGKSSVVQAF LGEMEKLAGVVNTVGKLAYVPQQAWI  
QNATVRDNILFGQTYDRKRYNKVIDACALRADIDILSAGDLTEIGEKGINLSGGQKQRIS  
LARAVYSDADLYLLDDPLSAVDAHVGKHIFEEVIGPKGILARKSRVLVTHGVTFLPQVDS  
IYVIKMG EISESGTFDQLVKNKGAFADFI IQHLQEGNEEEEEELNQIKRQISSTADVPELL  
GTVEKAIKLARTESLSDSISVTSADSLMGGGSLRRRTKRQDSHDSVASAASLKKKQVEVE  
GKLIETEKSTGGVEFAVYKHYIKSVGIFLSVATLVLN FVFQAFQIGSNLWLTQWANDQN  
VANDTGLRDMYLG VYGAFGFGQGFTSFFSD LAPALGSLHAAKVLHSMLENNVLRAPMTMF  
DTPVGRILSRFSKDVESVDQKMPQVINDCIWCAFEVLATIVVISLSTPIFLAVIVPIAF  
LYYFAQRFYVATSRQLMRLESVSRSPIYSHFSETVTGASTIRAYNVGDRFIEESDAKV DK  
NQVCKYPSVIANRWLAIRLEMVGNLIILFASLFAVLGGQTNPGLVGLSVSYALQVTQTLN  
WLVRMSSDIETNIVSVERIKEYGETKQEAPWELEQDKNKPKNWPQEGRVEFQNFQVRYRE  
GLDLVLRGVSFNIQGGEKVGIVGRTGAGKSSLTALFRIIEAAGGRISIDGVDIASMGLH  
MLRSRLTIIPQDPVLFSGSLRINLDPFEIKTDDEIWKALELSHLKSFVKSLAAGLNHEIA  
EGGENLSVGQRQLVCLARALLRKT KVLVLDEATAAVDLETDDLIQKTIRTEFKECTVLT I  
AHLRLNTILDS DKVIVLDKGQIIEFASPTELLNPKSAFY SMAKDANLV